

Date: Friday, 5/25/2007 8:18:35 AM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: 412 FLOAT SKIDTUBE
Job Number	: 32593		
Estimate Number	: 11437		
P.O. Number	: <u>N/A</u>	Part Number	: D3391015
This Issue	: 5/25/2007 S.O. No. : <u>N/A</u>	Drawing Number	: D3391 REV.F
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: <u>N/A</u>	Drawing Revision	: F
Previous Run	: <u>N/A</u>	Material	: <u>N/A</u>
Written By	: <u>AD 07.05.28</u>	Due Date	: 6/20/2007
Checked & Approved By	: <u>AD 07.05.28</u>	Qty:	1 Um: Each
Comment	: est rev A 05.12.13 New issue EC		
	: est rev B 06.02.09 Dwg @ revD EC		
	: est rev C 07.03.13 dwg @revF ec		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	D6014090	ALUMINUM EXTRUSION
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Comment: Qty.: 1.0000 f(s)/Unit Total: 1.0000 f(s)

ALUMINUM EXTRUSION

Pick:

Qty Part Number Description Batch

1 D6014-090 Extrusion 265410

Identify as D3391-3

MS 07/06/25

①

2.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
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Comment: MORI SEIKI CNC LATHE LARGE

Turn as per Folio FA599

Rev: AA & Dwg D3391 Rev: F

MS 07/06/25

①

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
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Comment: INSPECT PARTS AS THEY COME OFF MACHINE

MS 07/06/25

①

4.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
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Comment: HAAS

1-Machine as per Folio FA 599 Rev: AA & Dwg D3391 Rev: F

2-Deburr

JL 07/07/09

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: D3391-015 PAR #: N/A Fault Category: Prod/Machining <sup>parts</sup> NCR: Yes No DQA: Yes Date: 07.07.11  
 QA: N/C Closed: Yes Date: 07.07.11

NCR: <u>32593</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>07/07/09</u>	<u>4</u>	<u>-1 part 2.484 holes are off by .030 of center line on one side only, part was gauged at wrong place.</u>	<u>PH per 055 042 07.07.09</u>	<u>SEE ATTACHED PART IS SCRAP</u>	<u>J.L 07/07/09</u>	<u>RB 055 042 07.07.09</u>	<u>En 07/07/09</u>	
		<u>→ tool was dropped when performing a tool change and caused a dent in the tube. (HANS #1)</u>	<u>[Signature] 07/07/10</u>	<u>Destroy</u>	<u>SAD 07/07/10</u>	<u>En 07/07/10</u>	<u>[Signature] 07/07/10</u>	<u>En 07/07/10</u>

NOTE: Date & initial all entries

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Job Number: 32593

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

JL 07/07/09

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

7.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

SCRAP

8.0

BENDING

BENDING MACHINE



Comment: NC Bender

Form as per Dwg D3391

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill Tube as per D3391 using DT8808 (ALL HOLES)

3-Drill and c' sink wearshoe holes as per Dwg D3391

4-C' sink holes for float bag (4 holes per side) as per Dwg D3391  
Deburr

5- Tranfer holes from D3391-013 for electric step in tube

11.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Job Number: 32593

Part Number: D3391015

Job Number:



Seq. #:	Machine Or Operation:	Description :
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12.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
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Comment: HAND FINISHING RESOURCE #1  
Acid etch and Alodine as per QSI 005 4.1

13.0	POWDER COATING	POWDER COATING
------	----------------	----------------



Comment: POWDER COATING  
Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

14.0	QC3	INSPECT POWDER COAT/CHEMICAL CONVERSION
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Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

15.0	AESS10KB366	INSERT
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Comment: Qty.: 18.0000 Each(s)/Unit Total : 18.0000 Each(s)  
Insert  
Pick:  
Qty Part Number Description Batch  
18 AESS10KB366 Insert

16.0	NAS1330C3KB316	INSERT
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Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
Pick:  
Qty Part Number Description Batch  
4 NAS1330C3KB316 Insert

17.0	NAS1330C3KB266	INSERT
------	----------------	--------



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)  
Pick:  
Qty Part Number Description Batch  
4 NAS1330C3KB266 Insert

18.0	NAS1330C3KB216	INSERT
------	----------------	--------



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
Pick:  
Qty Part Number Description Batch  
4 NAS1330C3KB216 Insert

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Job Number: 32593

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

NAS1330C3KB166

INSERT



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty Part Number Description Batch

12 NAS1330C3KB166 Insert

20.0

NAS1330C4KB151

INSERT



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Pick:

Qty Part Number Description Batch

4 NAS1330C4KB151 Insert

21.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Aft Cap

Pick:

Qty Part Number Description Batch

1 D2646 Aft Cap

22.0

D35371

WEARPAD



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

WEARPAD

23.0

D35377

Wearpad



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Wearpad

24.0

D35531

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

25.0

D35533

Gasket



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Gasket

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Part Number: D3391015

Job Number:



Seq. #:	Machine Or Operation:	Description :
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26.0	AN3C4A	BOLT
------	--------	------



Comment: Qty.: 6.0000 Each(s)/Unit Total : 6.0000 Each(s)

Bolt

Pick:

Qty	Part Number	Description	Batch
2	AN3C4A	Bolt	

27.0	AN3C5A	Bolt
------	--------	------



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

28.0	AN960C10L	washer
------	-----------	--------



Comment: Qty.: 10.0000 Each(s)/Unit Total : 10.0000 Each(s)

Inventory

Pick:

Qty	Part Number	Description	Batch
2	AN960C10L	Washer	

29.0	NAS1515H3L	WASHER
------	------------	--------



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

WASHER

Pick:

Qty	Part Number	Description	Batch
2	NAS1515H3L	Washer	

30.0	HAND FINISHING1	HAND FINISHING RESOURCE #1
------	-----------------	----------------------------



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Install inserts per "insert installation detail" of dwg D3391

2-Install Aft Cap as per Dwg D3391

A/R Sikaflex-241/-291 \_\_\_\_\_

Sikaflex expiry date: \_\_\_\_\_

31.0	QC5	INSPECT WORK TO CURRENT STEP
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Comment: INSPECT WORK TO CURRENT STEP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Job Number: 32593

Part Number: D3391015

Job Number:



Seq. #:

Machine Or Operation:

Description :

32.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

33.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



u 07-07-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

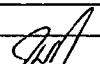
<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	<b>32593</b>
<b>Description:</b> Float Skidtube (412)		<b>Part Number:</b>	<b>D3391-3</b>
<b>Inspection Dwg:</b> D3391 <b>Rev:</b> F		<b>Page 1 of 1</b>	

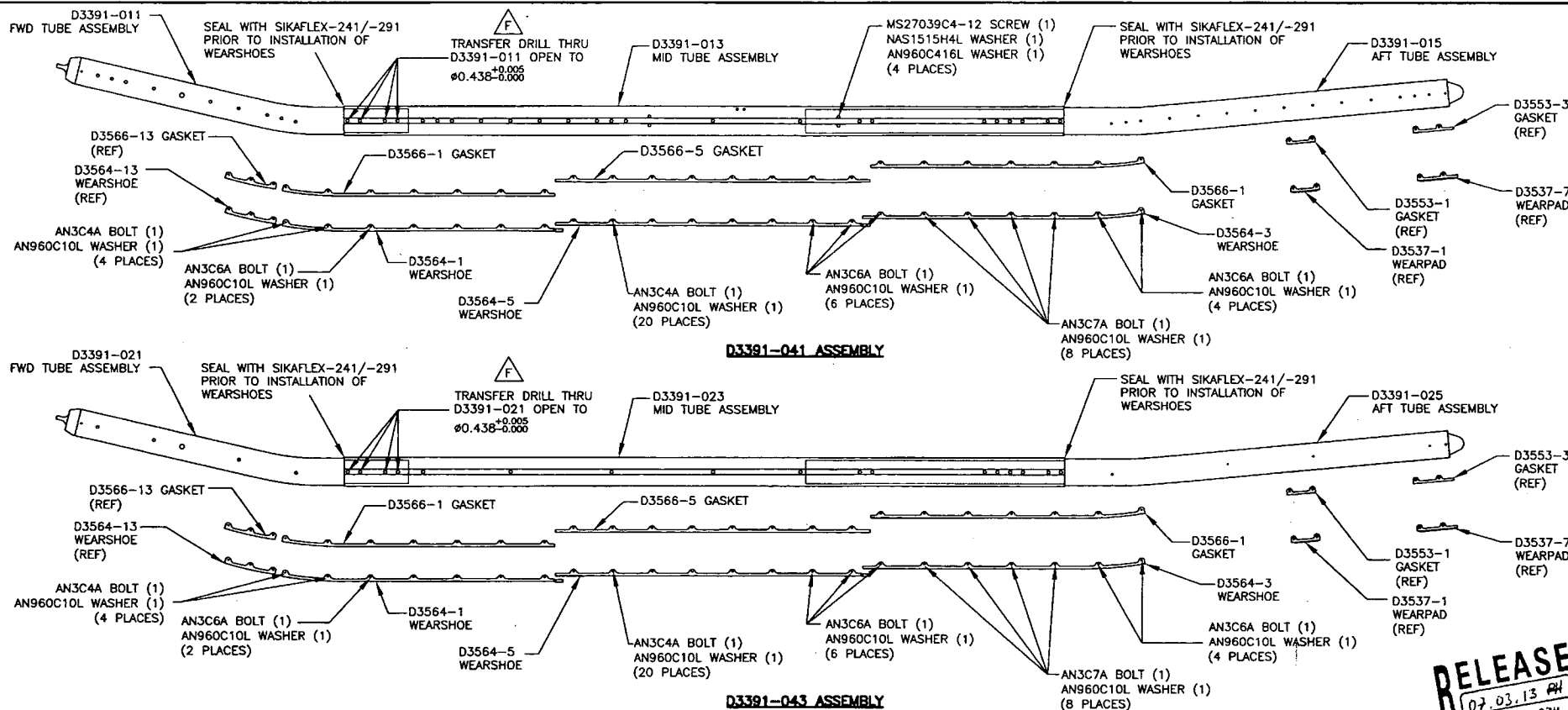
### FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**
                         
 ☐ **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
14.000	+/-0.010	14.000	✓			
3.500	+/-0.010	3.502	✓			
88.93	+/-0.030	88.93	✓			
44.995	+/-0.030					
3.200	+/-0.010	3.200	✓			
1.526	+0.000/-0.030	1.522	✓			
0.200	+/-0.010					
7.500	+/-0.010	7.500	✓			
27.750	+/-0.010	27.750	✓			
31.750	+/-0.010	31.750	✓			
35.250	+/-0.010	35.250	✓			
0.400	+/-0.010					
3.300	+/-0.010	3.300	✓			
0.200	+/-0.010	.206	✓			
3.520	+/-0.010	3.525	✓			
0.687	+0.010/-0.000	.690	✓			
R0.062	+/-0.010	.062	✓			
Ø0.484	+0.005/-0.001	.489	✓			

<b>Measured by:</b>	<b>MS/ J.L</b>	<b>Audited by:</b>		<b>Prototype Approval:</b>	N/A
<b>Date:</b>	<b>01/06/25</b>	<b>Date:</b>		<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue      P/O D3391-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	
C	07.04.20	Ø0.208 dimension removed	KJ/JLM	



#### D3391-041/-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY	QTY	PART NUMBER	DESCRIPTION
-041	-043		
X	X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
		D3391-043	FLOAT SKIDTUBE ASSEMBLY
1		D3391-011	FWD TUBE ASSEMBLY
1		D3391-013	MID TUBE ASSEMBLY
1		D3391-015	AFT TUBE ASSEMBLY
1	1	D3391-021	FWD TUBE ASSEMBLY
1	1	D3391-023	MID TUBE ASSEMBLY
1	1	D3391-025	AFT TUBE ASSEMBLY
1	1	D3564-1	WEARSHOE
1	1	D3564-3	WEARSHOE
1	1	D3564-5	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
24	24	AN3C4A	BOLT
12	12	AN3C6A	BOLT
8	8	AN3C7A	BOLT
44	44	AN960C10L	WASHER
4		MS27039C4-12	SCREW
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER

#### GENERAL NOTES

- 1) ALL DIMENSIONS ARE IN INCHES
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) FINISH: ACID ETCH AND ALDINE PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
- 4) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
- 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL 'E' SIZE HOLES (Ø0.250-Ø0.257) FOR WEARSHOE INSERTS. C/SINK Ø0.391/Ø0.425 x 100" AS APPLICABLE AND INSTALL INSERTS EXCEPT WHERE INDICATED.

NO. 20593  
 WORK ORDER  
 RETURN TO  
 SHOP COPY  
 ENGINEERING  
 CONTROLLED COPY  
 SUBJECT TO AMENDMENT  
 WITHOUT NOTICE

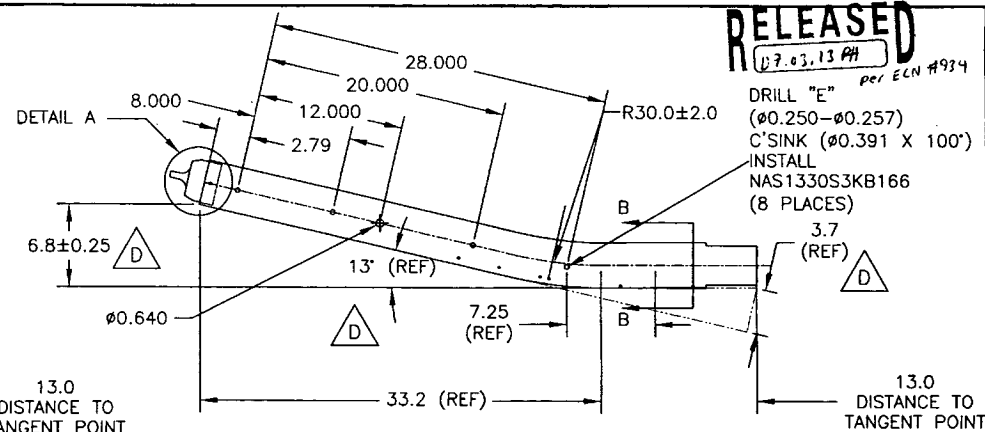
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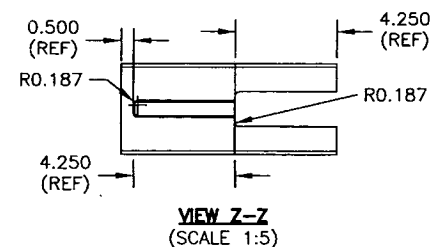
F	07.01.18	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021
E	06.04.25	CHANGE TOLERANCE, EASE MANUFACTURE
D	06.01.23	UPDATE TOLERANCE, CHANGE HOLE SIZE
C	05.09.27	LENGTHEN AFT EXTENSION
B	05.06.10	DRAWING UPDATES
A	05.02.07	NEW ISSUE
DESIGN	PH	DRAWN BY AH
CHECKED	#	APPROVED #
DATE	07.01.18	TITLE
		412 FLOAT SKIDTUBE
		REV. F
		SHEET 1 OF 5
		SCALE
		NTS

RELEASED  
 07.03.13 AH  
 per E-4N #934

per ECN H 121




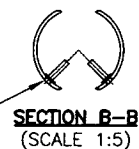
**D3391-021 ASSEMBLY AND BENDING DETAIL**



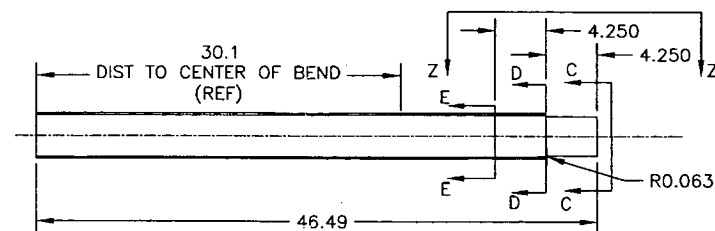
**VIEW Z-Z**  
(SCALE 1:5)

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
10	10	AN3C4A	BOLT
4	4	NAS1515H3L	WASHER
10	10	AN960C10L	WASHER
30	20	NAS1330S3KB166	INSERT (OR NAS1330C3KB166)


 DRILL "E"  
 (Ø0.250—Ø0.257)  
 C'SINK (Ø0.391 X 100°)  
 INSTALL  
 NAS1330S3KB166  
 (12 PLACES)



**SECTION B-B**  
(SCALE 1:5)



**D3391-1 DRILLING AND CUTTING DETAIL**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)

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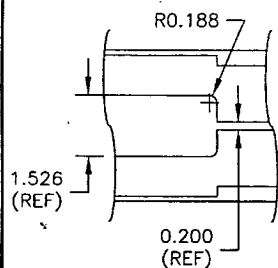
REV. F

SCALE

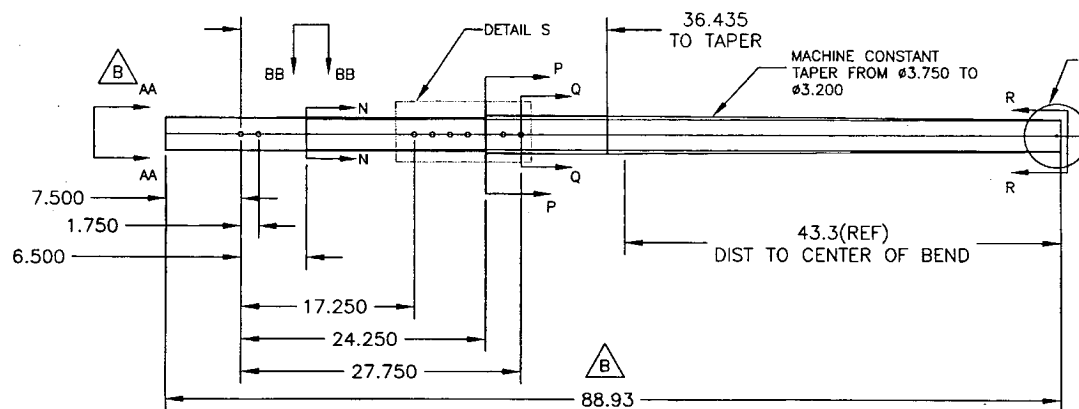
3410



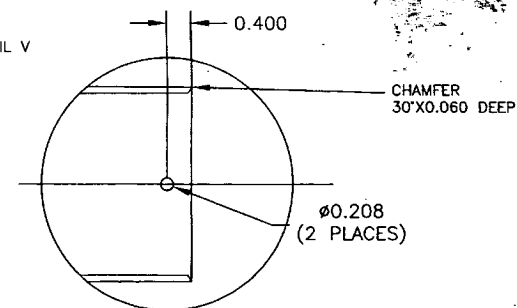




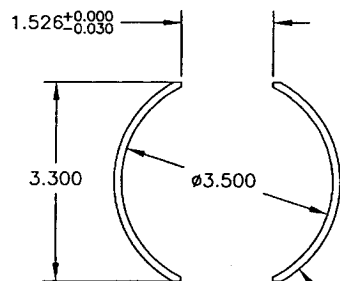
VIEW BB-BB  
(SCALE 1:3)



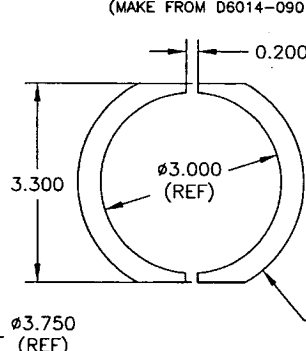
D3391-3 AFT DRILLING AND CUTTING DETAIL  
(MAKE FROM D6014-090 SKIDTUBE MATERIAL)



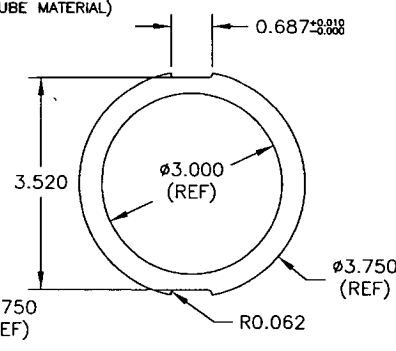
DETAIL V  
(SCALE 1:2)



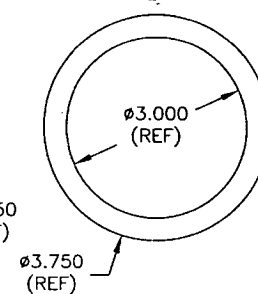
SECTION AA-AA  
(SCALE 1:2)



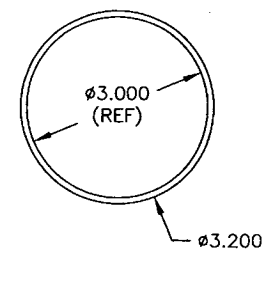
SECTION N-N  
(SCALE 1:2)



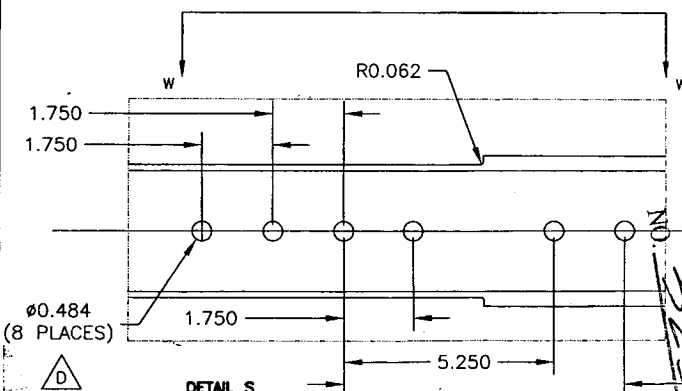
SECTION P-P  
(SCALE 1:2)



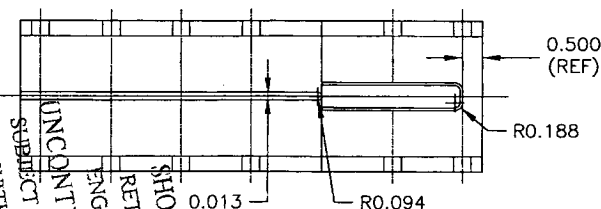
SECTION Q-Q  
(SCALE 1:2)



SECTION R-R  
(SCALE 1:2)



DETAIL S  
(SCALE 1:3)



VIEW W-W  
(SCALE 1:3)

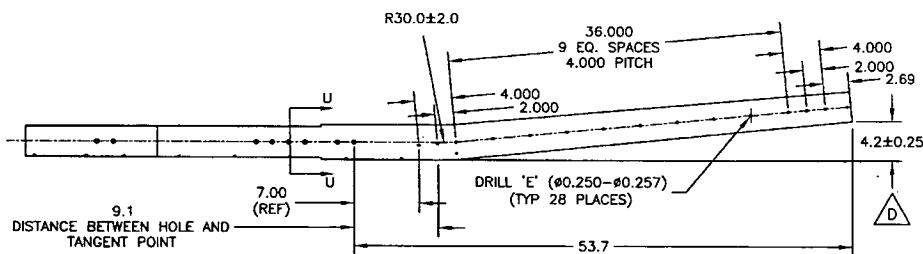
NO. 125933  
WORK ORDER  
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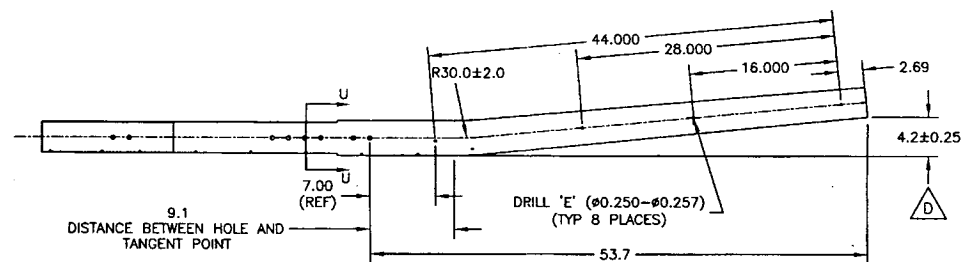
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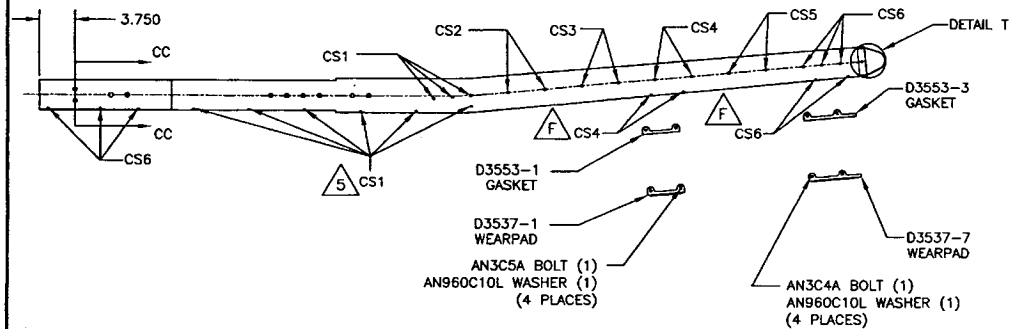
DESIGN PH	DRAWN BY PH	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, WA	REV. F
CHECKED #	APPROVED #	DRAWING NO. D3391	SHEET 4 OF 5
DATE 07.01.18	TITLE 412 FLOAT SKIDTUBE	SCALE 1:12	



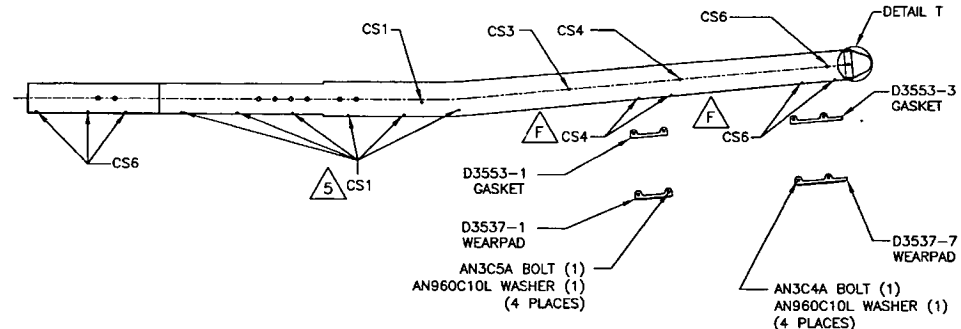
D3391-015 BENDING AND ASSEMBLY DETAIL



D3391-025 BENDING AND ASSEMBLY DETAIL



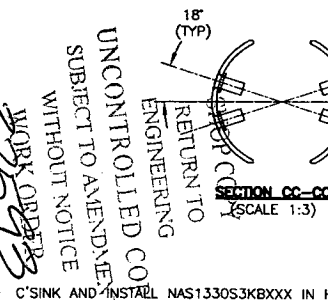
D3391-015 INSERT AND WEARPAD INSTALLATION DETAIL  
(SEE TABLE)



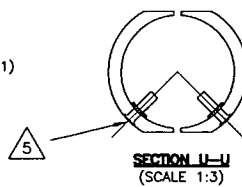
D3391-025 INSERT AND WEARPAD INSTALLATION DETAIL  
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X	X	D3391-015	AFT TUBE ASSEMBLY
		D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
18	14	NAS1330S3KB366	INSERT (OR AFS10KB366)
4	2	NAS1330S3KB316	INSERT (OR NAS1330C3KB316)
8	6	NAS1330S3KB266	INSERT (OR NAS1330C3KB266)
4	4	NAS1330S3KB216	INSERT (OR NAS1330C3KB216)
16	12	NAS1330S3KB166	INSERT (OR NAS1330C3KB166)
4	4	NAS1330S4KB151	INSERT (OR NAS1330C4KB151)
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
2	2	NAS1515H3L	WASHER
10	10	AN960C10L	WASHER



DRILL 'Q' (Ø0.332-Ø0.338)  
C'SINK (Ø0.529X100")  
NAS1330S4KB151 INSERT (1)  
(4 PLACES)



C'SINK AND INSTALL NAS1330S3KBXXX IN HOLES MARKED CS1-CS6 AS FOLLOWS

HOLES MARKED	QTY D3391-015	QTY D3391-025	C'SINK	P/N
CS1	18	14	Ø0.425	NAS1330S3KB366
CS2	4		Ø0.391	NAS1330S3KB366
CS3	4	2	Ø0.391	NAS1330S3KB316
CS4	8	6	Ø0.391	NAS1330S3KB266
CS5	4		Ø0.391	NAS1330S3KB216
CS6	16	12	Ø0.391	NAS1330S3KB166

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DESIGN PH	DRAWN BY BL	<b>DART</b> DART AEROSPACE USA, INC. PORT HADLOCK, MA
CHECKED H	APPROVED H	DRAWING NO. D3391
DATE 07.01.18	TITLE 412 FLOAT SKIDTUBE	REV. F SHEET 5 OF 5 SCALE 1:12

RELEASED  
07, 03.13 RH  
per ECR #534

**Peter Hum**

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**From:** David Shepherd [dshepherd@dartaero.com]  
**Sent:** July 9, 2007 4:12 PM  
**To:** 'Peter Hum'  
**Cc:** 'Jean-Luc Menard (Jean-Luc Menard)'; 'Eric Charbonneau'; mbellavance@dartaero.com  
**Subject:** RE: D3391-5 aft tube dent

I agree. I would say to scrap it.

David

---

**From:** Jean-Luc Menard [mailto:jmenard@dartaero.com]  
**Sent:** Monday, July 09, 2007 8:03 AM  
**To:** 'Peter Hum'; 'David Shepherd'  
**Cc:** 'Jean-Luc Menard (Jean-Luc Menard)'; 'Eric Charbonneau'; mbellavance@dartaero.com  
**Subject:** RE: D3391-5 aft tube dent

I would say scrap it.  
JLM

---

**From:** Peter Hum [mailto:phum@dartaero.com]  
**Sent:** Monday, July 09, 2007 9:09 AM  
**To:** 'David Shepherd'  
**Cc:** 'Jean-Luc Menard (Jean-Luc Menard)'; 'Eric Charbonneau'; mbellavance@dartaero.com  
**Subject:** D3391-5 aft tube dent

David,

We are machining a D3391-5 aft tube for the tri-beam.

Upon inspection the following was found:

- 1) 2 ground handling holes on 1 side are 0.030" below the centerline. See picture DSCF4095
- 2) On the top side of the tube there is a dent caused during the machining process. See picture DSCF4088. The dent is 0.125" OD x 0.030" deep. Apparently this happened when the tool fell out of the tool change/spindle. The end mill hit the top of the tube and the end result is the dent. The location of this dent is almost directly at the centerline of the aft crosstube.

Solution:

- a) For 1) I think we can continue, if production needs to grind the D3391-5 ground handling holes only. If required, can we grind the holes on the D3391-5 only to allow for installation of the ground handling lugs
- b) For 2) Given the size, depth, and relative location of the dent, I'm not sure how to proceed

How should we proceed?

JLM/EC,

See comment 2).

Thanks

09/07/2007

